

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

**SPECIAL PRODUCTS**

$$(a+b)(a+b)=a^2+2ab+b^2 \quad (a+b)(a-b)=a^2-b^2 \quad (a-b)(a-b)=a^2-2ab+b^2$$

Use the FOIL Method and then compare it to the Special Product Rules

$(x+2)(x+2)$ $\frac{x^2}{F} + \frac{2x}{O} + \frac{2x}{I} + \frac{4}{L}$ $x^2 + 2x + 2x + 4$ $x^2 + 4x + 4$ $x^2 + 2(2x) + 2^2$ <p>Rule</p>	$(x+2)(x-2)$ $\frac{x^2}{F} + \frac{(-2x)}{O} + \frac{2x}{I} + \frac{4}{L}$ $x^2 - 4$ $x^2 - 2^2$ <p>Rule</p>	$(x-2)(x-2)$ $\frac{x^2}{F} + \frac{(-2x)}{O} + \frac{(-2x)}{I} + \frac{4}{L}$ $x^2 + (-2x) + (-2x) + 4$ $x^2 - 4x + 4$ $x^2 - 2(2x) + 2^2$ <p>Rule</p>
$(x+3)(x+3)$ $\frac{\quad}{F} + \frac{\quad}{O} + \frac{\quad}{I} + \frac{\quad}{L}$	$(x+3)(x-3)$ $\frac{\quad}{F} + \frac{\quad}{O} + \frac{\quad}{I} + \frac{\quad}{L}$	$(x-3)(x-3)$ $\frac{\quad}{F} + \frac{\quad}{O} + \frac{\quad}{I} + \frac{\quad}{L}$
$(x+3)(x+3)$ Substitute values into rule $a = \underline{\quad}$ $b = \underline{\quad}$ $a^2 + 2ab + b^2$	$(x+3)(x-3)$ $a = \underline{\quad}$ $b = \underline{\quad}$ $a^2 - b^2$	$(x-3)(x-3)$ $a = \underline{\quad}$ $b = \underline{\quad}$ $a^2 - 2ab + b^2$

Rule  $(a+b)(a+b)=a^2+2ab+b^2$

Rule  $(a-b)(a-b)=a^2-2ab+b^2$

Recall that  $(a+b)^2=(a+b)(a+b)$

Recal that  $(a-b)^2=(a-b)(a-b)$

Rule  $(a+b)(a-b)=a^2-b^2$

**Identify and use the Special Products Rule**

$(x+2)(x-2)$ Choose the rule & substitute  $a=x$ $b=2$  $a^2-b^2$  $x^2-2^2$ $x^2-4$	$(x-10)^2$  $a=$ _____ $b=$ _____	$(x+6)^2$  $a=$ _____ $b=$ _____
$(3x+2)(3x-2)$  $a=$ _____ $b=$ _____	$(x+\frac{1}{2})(x-\frac{1}{2})$  $a=$ _____ $b=$ _____	$(x-1)^2$  $a=$ _____ $b=$ _____
$(2x+3)(2x+3)$  $a=$ _____ $b=$ _____	$(2x-4)(2x+4)$  $a=$ _____ $b=$ _____	$(5x-1)^2$ means $(5x-1)(5x-1)$  $a=5x$ $b=1$  $a^2-2ab+b^2$ $(5x)^2-2(5x)(1)+1^2$ $25x^2-10x+1$